

January 28, 2021



U.S. Department  
of Transportation

East Building, PHH-30  
1200 New Jersey Avenue S.E.  
Washington, D.C. 20590

**Pipeline and Hazardous  
Materials Safety Administration**

DOT-SP 15425  
(THIRD REVISION)

**EXPIRATION DATE: 2024-12-31**

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: National Aeronautics and Space Administration  
(NASA)  
Washington, DC
2. PURPOSE AND LIMITATION:
  - a. This special permit authorizes the transportation in commerce of a certain family of hydrazine compounds with primary hazard classes of Class 8 and Division 6.1 on the same motor vehicle without regard to segregation requirements. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
  - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
  - c. No party status will be granted to this special permit.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 177.848 in that the segregation requirements are waived.
5. BASIS: This special permit is based on the application of National Aeronautics & Space Administration (NASA) dated December 2, 2020 submitted in accordance with § 107.109.

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6. HAZARDOUS MATERIALS (49 CFR § 172.101):

Hazardous Materials Description			
Proper Shipping Name	Hazard Class/ Division	Identification Number	Packing Group
Dimethylhydrazine, unsymmetrical	6.1	UN1163	I
Hydrazine, anhydrous	8	UN2029	I
Methylhydrazine	6.1	UN1244	I
Toxic by inhalation liquid, flammable, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m3 and saturated vapor concentration greater than or equal to 10 LC50*	6.1	UN3384	I

\*This is a mixture of 50% hydrazine and 50% dimethylhydrazine, unsymmetrical.

7. SAFETY CONTROL MEASURES:

a. PACKAGING: Packagings must be in accordance with the requirements of the Hazardous Materials Regulations and the following:

## (1) Non-bulk packagings:

(i) Hydrazine (Hz). The packaging must comply with § 173.201 or the equivalent. An impact-resistant glass receptacle of not more than 1 liter in volume with a non-reactive, absorbent material must be packed within a 4G outer packaging.

(ii) Methylhydrazine (MMH), Unsymmetrical Dimethylhydrazine (UDMH), and Aerozine-50. The packaging must comply with § 173.226. A combination packaging must consist of an inner packaging system and an outer packaging (4G). The

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inner packaging system consists of an impact-resistant glass receptacle (or equivalent) of not more than 1 liter in volume securely cushioned with a non-reactive, absorbent material, which must be packed within a leak-tight packaging of metal or plastic and must conform to the Packing Group I performance level. This inner packaging system must be packed within an outer packaging (4G).

(2) Cylinders:

(i) Packagings prescribed are non-DOT specification stainless steel cylinders with capacities between 5 and 119 gallons which must be constructed in conformance with DOT Specification 4BW (§§ 178.35 and 178.61), except as follows:

§ 178.35(e) Safety relief devices. Cylinders may not be equipped with safety relief devices.

§ 178.35(f) Markings. Applies except that each cylinder be marked with "DOT-SP 15425" instead of "DOT 4BW".

§ 178.61(b) Authorized steel.

(i) Material of construction must be SA240 type 304L stainless steel.

(ii) Heads are torispherical in shape. The knuckle radius must be equal to 6% of the inside crown radius and the inside crown radius must be equal to the outside diameter of the skirt.

§ 178.61(d) (2) Circumferential seams. Circumferential seam welds must be full penetration butt welds with full 100% radiograph inspection.

§ 178.61(g) Heat treatment. Cylinders need not be heat treated.

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§ 178.61(i)(5) Hydrostatic test. The first cylinder out of each lot of 500 or fewer successively produced must be hydrostatically tested to 4 times service pressure without bursting.

§ 178.61(j) Physical tests. Physical specimen tests are not required.

(ii) Prescribed packagings must be in conformance with § 173.40 except as follows:

§ 173.40(c)(1) Connections must be straight threads with controlled root radius straight threads (thread form symbol UNJ) in accordance with Military Specification MIL-S-8879. Female ports must be UNJ straight threads and must meet Military Standard MS33649. The sealing gasket must be polytetrafluoroethylene preformed packing per Military Standard MS9956 or ethylene propylene rubber preformed packing per NAS1613, Aerospace Industries Association of America Inc. MS9956 preformed packing must be deformed in assembly only once and any reassembly requires a new preformed packing.

§ 173.40(c)(2) Valves must be quarter turn ball valves with secondary stem containment stem seals of a NASA approved design. Prior to filling, or at a minimum frequency of one year, a bubble leak check must be performed on all mechanical joints at 200 psig. Prior to cylinder refill, or at a five-year frequency, whichever is greater, valves must have all softgood materials (such as seats, packing, and o-rings) replaced, valves must be cleaned, and valves must be leak tested at rated pressure at all joints and across the seat.

Cylinder Testing: Cylinders must be retested in accordance with the requirements of § 180.209 applicable to the DOT 4BW cylinder.

(3) Portable Tank: DOT-Specification 51 Portable Tanks with a capacity of not more than 500 gallons that comply with the requirements of §§ 173.243 and 173.244

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are authorized. The portable tank used for Division 6.1 liquids, Hazard Zone A or B, must be certified and stamped to the ASME Code as specified in § 178.273(b)(6).

b. OPERATIONAL CONTROLS:

(1) This special permit authorizes NASA-related shipments to NASA Centers or contractors' locations within the US (about one shipment per month) and within the boundaries of NASA KSC and adjacent Cape Canaveral Air Force Station (one shipment per week).

(2) No other hazardous material may be carried onboard the same motor vehicle.

8. SPECIAL PROVISIONS:

a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

b. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

9. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle.

10. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each motor vehicle used to transport packages covered by this special permit.

11. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:

- o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.

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- o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
- o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

12. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for

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Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover  
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at [http://hazmat.dot.gov/sp\\_app/special\\_permits/spec\\_perm\\_index.htm](http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm). Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

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